

WE CLAIM:

1. A media printer, comprising in combination:
 - means for moving a plurality of media samples from a supply of media samples;
 - means for printing information on at least selected ones of said media samples;

and

means for attaching a value-adding device to only selected ones, but not all, of said media samples.

2. The media printer of claim 1 wherein said value-adding devices comprise radio frequency identification transponders.

3. The media printer of claim 2 further comprising means for determining whether said radio frequency identification transponders are defective or misprogrammed.

4. The media printer of claim 3 further comprising means for causing a failure indicia to be printed on a surface of each one of said media samples to which a defective or misprogrammed radio frequency identification transponder is attached.

5. The media printer of claim 1 wherein a plurality of value-adding devices are attached to at least one of said plurality of media samples.

6. The media printer of claim 1 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

7. A media printer, comprising in combination:
 - a media supply and a media exit;

a generally continuous web that operably interconnects said media supply and said media exit so that a plurality of media samples are moved from said media supply to said media exit during operation;

a printhead that is mounted in operative relation to said generally continuous web to print information on selected portions of a first surface of each one of said media samples; and

an applicator mechanism that is mounted in operative relation to said generally continuous web to attach a value-adding device to a second surface of selected ones of said media samples after information has been printed on the first surface of said selected ones of said media samples by said printhead.

8. The media printer of claim 7 wherein said value-adding devices comprise radio frequency identification integrated circuits adopted to make contact with an antenna structure on said media samples to form radio frequency identification transponders.

9. The media printer of claim 7 wherein said value-adding devices comprise radio frequency identification transponders.

10. The media printer of claim 9 further comprising a verification mechanism that is operably disposed with respect to said generally continuous web to verify the operability of at least some of said radio frequency identification transponders.

11. The media printer of claim 10 wherein said verification mechanism causes failure indicia to be printed on the first surface of each one of said media samples to which an inoperable radio frequency identification transponder is attached.

12. The media printer of claim 7 wherein a value-adding device is attached to less than all of said plurality of said media samples.

13. The media printer of claim 7 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

14. A method for manufacturing a printed media, comprising the steps of:
moving a plurality of media samples from a media supply to a media exit;
printing information on selected media samples; and
attaching a value-adding device to said selected ones of said media samples

after information has been printed on the first surface of said selected ones of said media samples.

15. The method of claim 14 wherein said value-adding devices comprise radio frequency identification integrated circuits adopted to make contact with an antenna structure on said media samples to form radio frequency identification transponders.

16. The method of claim 14 wherein said value-adding devices comprise radio frequency identification transponders.

17. The method of claim 14 further comprising the step of verifying that at least some of said radio frequency identification transponders are operable.

18. The method of claim 17 further comprising the step of causing failure indicia to be printed on the first surface of each one of said media samples to which an inoperable, or misprogrammed radio frequency identification transponder is attached.

19. The method of claim 14 wherein a value-adding device is attached to less than all of said plurality of said media samples.

20. The method of claim 14 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

21. A device for use in connection with a thermal transfer printer that includes first web means for moving a plurality of media samples from a supply of media samples as well as a printhead that prints information on a first surface of said plurality of media samples, said device comprising:

a second web means for temporarily removing the plurality of media samples from said first web means; and

means for attaching a value-adding device to a second surface of selected ones of said media samples after information has been printed on the first surface of said selected ones of said media samples.

22. The device of claim 21 wherein said value-adding devices comprise radio frequency identification integrated circuits adopted to make contact with an antenna structure on said media samples to form radio frequency identification transponders.

23. The device of claim 21 wherein said value-adding devices comprise radio frequency identification transponders.

24. The device of claim 23 further comprising means for verifying that at least some of said radio frequency identification transponders are operable.

25. The device of claim 24 further comprising means for causing a failure indicia to be printed on the first surface of each one of said media samples to which an inoperable radio frequency identification transponder is attached.

26. The device of claim 21 wherein a value-adding device is attached to less than all of said plurality of media samples.

27. The device of claim 21 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

28. A device for use in connection with a thermal transfer printer that includes a first web that allows a plurality of media samples to be moved from a supply of media samples as well as a printhead that prints information on a first surface of said plurality of media samples, said device comprising:

a second web that temporarily removes the plurality of media samples from said first web; and

an attachment mechanism that attaches a value-adding device to a second surface of selected ones of said media samples after information has been printed on the first surface of said selected ones of said media samples.

29. The device of claim 28 wherein said value-adding devices comprise radio frequency identification integrated circuits adopted to make contact with an antenna structure on said media samples to form radio frequency identification transponders.

30. The device of claim 28 wherein said value-adding devices comprise radio frequency identification transponders.

31. The device of claim 30 further comprising means for verifying that at least some of said radio frequency identification transponders are operable.

32. The device of claim 31 further comprising means for causing a failure indicia to be printed on the first surface of each one of said media samples to which an inoperable radio frequency identification transponder is attached.

33. The device of claim 28 wherein a value-adding device is attached to less than all of said plurality of media samples.

34. The device of claim 28 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

35. A method, comprising the steps of:

providing a series of media samples which have a non-existent or predetermined capability of responding wirelessly to a wireless interrogation signal or electromagnetic field; and
introducing a capability, or modifying an existing predetermined capability, of only selected ones, but not all, said series of media samples of responding to a wireless interrogation signal or electromagnetic field.

36. The method of claim 35 wherein said value-adding devices comprise radio frequency identification integrated circuits adopted to make contact with an antenna structure on said media samples to form radio frequency identification transponders.

37. The method of claim 35 wherein said introducing or modifying step comprises inserting, applying, forming or otherwise associating an RFID transponder with only said selected ones of said series of media samples.

38. The method of claim 37 wherein said RFID transponder is selected from a group consisting of a chipless transponder, a passive transponder, and an active transponder.

39. The method of claim 36 wherein said media samples are selected from a group consisting of labels, tickets, tags, and cards.

40. The method of claim 35 including introducing or modifying an electrical characteristic of only said selected ones of said series of media samples.

41. The method of claim 40 wherein said selected ones of said series of media samples have a preformed characteristic impedance, and wherein said introducing or modifying step comprises altering said preformed characteristic impedance.

42. The method of claim 41 wherein said preformed characteristic impedance becomes a resonant structure by attachment of a value-adding device to form a passive transponder.

43. The method of claim 41 wherein said preformed characteristic impedance becomes a resonant structure by attachment of a value-adding device to form a chipless transponder.

44. The method of claim 41 wherein said preformed characteristic impedance

becomes a resonant structure by attachment of a value-adding device to form an active transponder.

45. The method of claim 35 wherein said introducing or modifying step comprises forming or changing a resonant structure on the selected media.

46. The method of claim 45 wherein said forming or changing step comprises depositing or altering a pattern of electrically conductive lines or patterns on the media.

47. A method of configuring on demand a series of labels, tickets, tags, cards or other media, comprising:

moving a series of like or unlike media; and
on demand, selectively applying, inserting, or otherwise associating with selected ones of said series of like or unlike media, a discrete, value-adding element.

48. The method of claim 47 wherein said value-adding element comprises an RFID transponder or other wireless transponder.

49. The method of claim 48 wherein said element is a radio frequency identification integrated circuit adopted to make contact with an antenna structure on said media to form a radio frequency identification transponder.

50. The method of claim 48 further comprising the step of communicating with said transponder before said associating step.

51. The method of claim 50 wherein said RFID transponder is programmed with process control instructions.
52. The method of claim 50 wherein said step of communicating includes the steps of testing, (i) identifying, or discerning a characteristic of the transponder, and (ii) reading information stored in said transponder or writing information into said transponder.
53. The method of claim 47 further comprising the step of processing said media before said associating.
54. The method of claim 53 wherein said step of processing includes printing on said media.
55. The method of claim 54 wherein said step of printing exhibits a result of said communication with said transponder.
56. The method of claim 55 wherein said printing indicates a defect or another characteristic or attribute of said transponder.
57. The method of claim 55 wherein said printing exhibits information read from or stored in said transponder.
58. The method of claim 47 including processing said media after said associating.
59. The method of claim 58 wherein said processing includes printing on said media.

60. The method of claim 59 wherein said step of printing comprises direct thermal printing, laser printing, ink jet printing or thermal transfer printing.
61. The method of claim 47 wherein said value-adding element has an adhesive on a surface and is laminated on a carrier, and wherein said step of associating includes removing said carrier to expose said adhesive surface.
63. The method of claim 61 wherein said value-adding element is pressed against said media after said step of removing to cause adherence therebetween.
63. The method of claim 62 wherein said value-adding element is tamped against said media pressing.
64. The method of claim 63 wherein said tamping comprises:
 providing a fast-acting solenoid;
 providing a gas spring that is driven by said solenoid; and
 utilizing a pressure-applying mechanism that is coupled to said gas spring and that defines a surface to press together said media and said element, said gas spring damping the fast action of said solenoid.
65. The method of claim 47 further comprising the step of placing said media on a carrier after said value-adding element is associated, creating a carrier-element-media laminate.
66. The method of claim 65 wherein said carrier is the same carrier employed to carry said media before said associating step.

67. The method of claim 65 further comprising the step of passing said carrier-element-media laminate through pinch rollers.

68. The method of claim 65 further comprising the step of affixing said carrier-element-media laminate to an object, or removing the carrier and affixing the resulting element-media laminate to an object.

69. The method of claim 47 wherein said media is moved in a first direction, and wherein said value-adding element is moved into position for application in a second direction that is different from said first direction.

70. The method of claim 69 wherein said second direction is transverse to said first direction.

71. The method of claim 47 further comprising the step of applying multiple value-adding elements to a single discrete media.

72. The method of claim 71 wherein at least one of said multiple value-adding elements is an RFID transponder or other wireless transponder.

73. The method of claim 72 wherein at least one of said elements is a radio frequency identification integrated circuit adopted to make contact with an antenna structure on said media to form a radio frequency identification transponder.

74. The method of claim 71 wherein each of said multiple value-adding elements comprises an RFID transponder or other wireless transponder.

75. The method of claim 71 further comprising the step of selectively printing said single discrete media.

76. The method of claim 71 wherein said multiple value-adding elements are applied in sequence.

77. The method of claim 71 wherein said multiple value-adding elements are applied successively at a single station or at multiple stations.

78. The method of claim 47 wherein said moving and said otherwise associating steps are performed under computer program control.

79. The method of claim 47 wherein said media are intermittently moved, and are stopped during said applying step.

80. The method of claim 47 further comprising the step of moving said value-adding elements into a position on a dispensing device which is retracted after a value-adding element is applied to a media.

81. The method of claim 47 wherein said value-adding element comprises a promotional device or peel-off label.

82. The method of claim 47 wherein said media includes printed information on a surface thereof.

83. The method of claim 82 wherein said printed information indicates whether said value-adding element is defective, inoperative, or has another characteristic or attribute.

84. The method of claim 82 wherein said printed information indicates whether the media or element has failed a test.

85. The article of claim 84 wherein said printed information includes test results or a date or time stamp.

86. The method of claim 47 further comprising the step of printing said media after the step of associating a value-adding element with the selected media.

87. The method of claim 47 wherein said step of associating is performed under computer program control.

88. The method of claim 47 further comprising the step of associating a plurality of value-adding elements with a single selected media.

89. The method of claim 47 further comprising the step of associating value-adding elements with different characteristics or data with selected different media.

90. The method of claim 47 wherein said media are moved on an adhesive-backed carrier, and wherein said step of associating includes delaminating said carrier from a selected media, and attaching a selected value-adding element to the exposed adhesive surface of said media.

91. The method of claim 78 wherein said steps of associating includes supporting a peeled media with vacuum, bringing said selected value-adding element into position adjacent the supported media, and pressing the media and element together.

92. The method of claim 91 wherein said selected value-adding element is tamped into position.

93. The method of claim 91 wherein the selected media and said selected value-adding element are relaminated after being pressed together.

94. The method of claim 90 wherein said selected media is relaminated after said selected value-adding element is attached.

95. The method of claim 47 wherein said like or unlike media have different characteristics.

96. The method of claim 47 wherein said associated value-adding elements have different characteristics.

97. The method of claim 47 wherein, under computer program control and on demand, individual media having selected characteristics are custom configured by causing one or more value-adding elements having chosen characteristics to be associated with said individual media.

98. The method of claim 97 wherein said individual media is further customized on demand by processing said individual media under said computer program control.

99. The method of claim 98 wherein said processing step includes printing on said individual media.

100. The method of claim 99 wherein said step of printing on said individual media is related to a value-added element associated with each one of said individual media.

101. The method of claim 97 wherein said individual media is further customized on demand by processing of the selected value-adding element .

102. The method of claim 101 wherein said element is an RFID transponder, and wherein said processing of said element includes programming or reprogramming the transponder.

103. The method of claim 47 wherein said selected element is adhesive backed and carried on a carrier, and wherein said associating step includes the steps of delaminating a selected element from its carrier, supporting said delaminated element with vacuum, bringing said selected element into position adjacent a media sample, and tamping said media sample and element together.

104. The method of claim 103 wherein said pressing is performed by tamping.

105. The method of claim 104 wherein said tamping comprises:
providing a fast-acting solenoid;
providing a gas spring that is driven by said solenoid; and

utilizing a pressure-applying mechanism that is coupled to said gas spring and that defines a surface to press together said media and said element, said gas spring damping the fast action of said solenoid.

106. The method of claim 104 wherein the selected media and said selected value-adding element are laminated after being pressed together.

107. A method of manufacturing a plurality of adhesive-backed labels, tickets, tags, cards or other media that is laminated on a carrier, comprising the steps of:

moving a series of media samples;

delaminating at least selected ones of said media samples from said carrier leaving, in each instance, an exposed adhesive media back surface; and

applying a discrete, value-adding element to said back surface of the selected media, whereby only the selected ones, but not all, of said media samples in said series are caused to have said value-adding element.

108. The method of claim 107 wherein said element is a radio frequency identification integrated circuit adopted to make contact with an antenna structure on said media to form a radio frequency identification transponder.

109. The method of claim 107 wherein said value-adding element is an RFID transponder or other wireless transponder.

110. The method of claim 109 wherein said RFID transponder is programmed with process control instructions.

111. The method of claim 110 wherein said instructions control a process of applying a second value-adding element to the media to which said value-adding element is applied.

112. The method of claim 109 including the step of communicating with said transponder before said applying step.

113. The method of claim 112 wherein said communicating includes testing, identifying, or discerning a characteristic of the transponder, or reading information stored in the transponder, or writing information into the transponder.

114. The method of claim 107 including processing said media before said applying.

115. The method of claim 114 wherein said processing includes printing on said media.

116. The method of claim 107 wherein said element has a non-adhesive front surface and an adhesive back surface, and wherein said front surface of said element is applied to back surface of said media.

117. The method of claim 116 wherein said element and said media are pressed together after applying to improve the adherence thereto.

118. The method of claim 117 wherein said pressing comprises tamping.

119. The method of claim 107 including placing said media on a carrier after said element is applied, creating a carrier-element-media laminate.

120. The method of claim 119 wherein the final carrier is the same as or different from the initial carrier.

121. The method of claim 119 including passing said carrier-element-media laminate through pinch rollers.

122. The method of claim 107 wherein an element is applied under computer program control selectively only to certain of said media and not to others.

123. The method of claim 107 wherein said carrier is intermittently fed, and is paused or stopped during said applying step.

124. The method of claim 107 including moving said element into position for said applying step on a dispensing device which is retracted after an element is applied to a media.

125. The method of claim 107 wherein said media are fed in a first direction, and wherein said elements are fed into said position in a direction transverse to said first direction.

126. An article of manufacture comprising a web, cassette, or other carrier carrying a series of labels, tickets, tags, cards or other media, said carrier being characterized by selected ones, but not all, of said media having associated therewith at least one value-adding element.

127. An article of claim 126 wherein said element is a radio frequency identification integrated circuit adopted to make contact with an antenna structure on said media to form a radio frequency identification transponder.

128. The article of claim 126 wherein said element comprises an RFID transponder or other wireless transponder.

129. The article of claim 128 wherein said media having an associated value-adding element exhibits visible indicia which indicates whether the transponder is defective, inoperative, misprogrammed, or has another characteristic or attribute.

130. The article of claim 128 wherein said media having an associated element exhibits information read from or stored in said transponder.

131. The article of claim 126 wherein said value-adding element comprises a second media.

132. The article of claim 131 wherein the second media is a promotional device.

133. The article of claim 126 wherein said media having an associated value-adding element exhibits text or other indicia indicating whether the media or element has failed a test.

134. The article of claim 133 wherein said indicia exhibits test results or a date or time stamp.

135. The article of claim 126 wherein the carrier carries a plurality of media having different characteristics.

136. The article of claim 135 wherein the different characteristics include size, material composition, type, stock, or other specifications.

137. The article of claim 126 wherein the carrier carries a plurality of elements having different characteristics.

138. The article of claim 126 wherein the carrier supports selected media having plural elements.

139. The article of claim 126 wherein the carrier supports selected media having selectively different preprocessing or postprocessing.

140. The article of claim 126 wherein the carrier carries selected media adapted to be applied in groups.

141. An on-demand printer for printing information on a series of labels, tickets, tags, cards or other media, comprising:

a media feeder; and
means for associating a discrete value-adding element with certain media, but not with other media, in a series of said media.

142. The printer of claim 141 wherein said element is a radio frequency identification integrated circuit adopted to make contact with an antenna structure on said media to form a radio frequency identification transponder.

143. The printer of claim 141 wherein said value-adding element is an RFID transponder or other wireless or other wireless transponder.

144. The printer of claim 143 further comprising means for communicating with said transponder.

145. The printer of claim 144 wherein said communicating step comprises (i) testing, identifying, or discerning a characteristic of the transponder, (ii) reading information stored in the transponder, or (iii) writing information into the transponder.

146. The printer of claim 141 further comprising means for processing said media before said value-adding element is associated with said selected media.

147. The printer of claim 146 wherein said means for processing includes a printing apparatus.

148. The printer of claim 147 wherein said value-adding element is an RFID transponder or other wireless or other wireless transponder, and wherein said printer or printer accessory includes means for communicating with said transponder.

149. The printer of claim 148 wherein said printing apparatus is responsive to said means for communicating and prints a result of said communicating with said transponder.

150. The printer of claim 148 wherein said printing apparatus is responsive to said means for communicating and prints an indication of a defect or another characteristic or attribute of said transponder.

151. The printer of claim 148 wherein said printing apparatus is responsive to said means for communicating and prints information based on data read from or stored in said transponder.

152. The printer of claim 142 wherein said means for associating is controlled by a computer program.

153. Apparatus for associating a selected element with a selected label, ticket, tag, card or other media, at least one of which element and media is adhesive-backed and carried on a carrier, comprising:

means for delaminating said one element or media from its carrier;

means for supporting said delaminated element or media;

means for bringing said supported element or media into a position contiguous with the other of said element or media; and

means for pressing said element and media together to cause adherence.

154. The apparatus of 153 wherein said means for pressing comprises a tamper.

155. The apparatus of claim 154 wherein said tamper comprises:

a fast-acting solenoid;

a gas spring that is driven by said solenoid; and

a pressure-applying mechanism that is coupled to said gas spring and that defines a surface to press together said media and said element, said gas spring damping the fast action of said solenoid.

156. The apparatus of 136 wherein said means for supporting utilizes a vacuum, wherein said tamper is reciprocable, and wherein said tamper includes a bellows through which the vacuum is delivered to said supported element or media.

157. The apparatus of 136 wherein said supported media is adhesive backed, and wherein said apparatus includes means for relaminating said supported media.

158. The apparatus of 153 wherein said value-adding element is an RFID transponder, and wherein said apparatus includes means for programming or reprogramming the transponder.

159. The apparatus of 153 wherein said means for bringing includes means for reciprocating said selected element into said contiguity and then withdrawing to leave the element.

160. For use in adhering a label, ticket, tag, card or other media to a value-adding element, one of which media and element have an exposed adhesive surface, a reciprocable tamping applicator mechanism comprising:

a fast-acting solenoid;

a gas spring that is driven by said solenoid; and

a pressure-applying mechanism that is coupled to said gas spring and that defines a surface that presses together the media and the element, said gas spring damping the fast action of said solenoid.

161. The mechanism of claim 160 including a return spring that returns said pressure-applying mechanism after a stroke by said solenoid.

162. The mechanism of claim 161 further comprising a plenum containing said solenoid and said gas spring, as well as a bellows that is disposed between said plenum and said pressure-applying mechanism.

163. The mechanism of claim 162 wherein said surface is perforated, and wherein said mechanism includes means coupled to said plenum for developing a vacuum in said plenum.

164. A promotional label, ticket, tag, card or other media having thereon or associated therewith:

one or more RFID transponders programmed with predetermined data representing information about, or of expected interest to, a particular prospect or class of prospects for a given product, service, or appeal; and

one or more printings containing information about, or of expected interest to, said particular prospect or class of prospects,

the printed and programmed information being coordinated and integrated to evoke a predetermined response from said class of prospects.

165. The media of claim 164 including a plurality of RFID transponders.

166. The media of claim 165 wherein at least one of said one or more RFID transponders is programmed with process control instructions.

167. The media of claim 166 wherein said instructions control a process of associating a second value-adding element with the media with which said value-adding element is

associated.

168. The media of claim 164 including a peelable or repositionable RFID transponder.

169. The media of claim 164 including a plurality of separately applied value-adding elements.

170. The media of claim 164 including a chipless RFID transponder.

171. The media of claim 170 wherein said RFID transponder is programmed with process control instructions.

172. The media of claim 171 wherein said instructions control a process of associating a second value-adding element with the media with which said value-adding element is associated.